State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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November 5, 1993

Mr. James A. Smith
Mine Manager
USMX of Utah, Inc.
PO Box 2650
St. George, Utah 84770

Re: Conditional Approval, Amended Notice of Intention to Commence Mining Operations, USMX of Utah, Inc., Goldstrike Mine, M/053/005, Washington County, Utah

Dear Mr. Smith:

The Division has completed it's review of your Amended Notice of Intention to Commence Mining Operations and draft Environmental Assessment, received August 25, 1993 and October 1, 1993, respectively. Conceptually, we do not have serious concerns or objections with your latest proposal. However, our review has identified a number of comments/questions that will require further clarification from USMX before this conditional approval may be considered final. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.

R647-4-105 Maps, Drawings & Photographs

105.2 Surface facilities map

Drawing No. GS-018 - does not have the new Beavertail Pit clearly labelled/identified. The solid black line surrounding the new pit and access/haul road is key-coded as "permit area boundary". We assume that this dark line is meant to be part of the new *disturbed* area boundary. Please revise this drawing to clarify these features.

The match lines on GS-018 and GS-019 should be moved closer to the edge of the drawing to make the drawings easier to interpret. Please revise the

drawings so that a number of the features are not eliminated/obscured when the match lines are overlain? (DWH)

105.3 Drawings or Cross Sections (slopes, roads, pads, ponds, etc.)

The Division conceptually approves of the proposed 5,000,000 gallon emergency solution storage pond and the extension to heap leach pad #2. We recognize that the Division of Water Quality (DWQ) has primacy for establishing and approving the final design details. Therefore, we will require USMX to provide us with a copy of the final approved design drawings/plans (and text), once DWQ has granted their approval of same. (DWH)

It appears that what was previously called the Moosehead Dump is now the called the West Dump. Please confirm or clarify this. (AAG)

R647-4-106 Operation Plan

106.2 Type of operations conducted, mining method, processing etc.

Page 42, section 3.4, contains a typographical error in the total gallons shown in the margin of safety calculations. The total is shown as 15,525,000 when the correct figure is 5,525,000. (AAG)

Page 41, section 3.4, and page 66 section 4.4 describe the rinse water pond as 3,000,000 gallons. Pages 42 and 44 refer to this pond as 2,900,000 gallons. The figures should be consistent throughout the revised NOI. Please correct these figures or explain why they should be different. (AAG)

106.3 Estimated acreage disturbed, reclaimed, annually?

Page 59, section 4, revised NOI, indicates that the proposed increase in disturbed acres for this mine plan amendment will be 35.9 acres. Page 5, section 2.2, draft EA, indicates a total disturbed acreage of 36.7 acres. The figures should be consistent. Please correct these figures or explain why they should be different? (DWH)

106.5 Existing soil types, location, amount

Table 4.8.-1, page 71, includes the assumption that 75% of the maximum volume of topsoil is salvageable. The recoverable topsoil for the Covington/Moosehead Haul road area is considerably less than 75% of the maximum volume. Please explain this discrepancy. (AAG)

106.9 Location & size of ore, waste, tailings, ponds

Page 59, section 4.0, and page 60, section 4.2, describe the extension to Leach Pad #2. Please include the area or dimensions of the proposed extension. (AAG)

R647-4-107 Operation Practices

107.3 Erosion control & sediment control

Page 56, section 3.9.2 refers the reader to Figure 3.9-1 for a description of the typical culvert placement. This appears to be a typo and should read Figure 4.9-1. (AAG)

Paragraph one, page 57, references three *low-flow* crossings which were to have been installed under the previous approved version of the mine plan. These three crossings are to be replaced with culverts during reclamation. Please identify these three crossing locations. (AAG)

Page 72, section 4.9, appears to contain a typo in the next to the last sentence. The text refers to drawing GS-020, which should reference drawing GS-018. (DWH)

Page 73, section 4.9, states that road culverts for the new access/haul road to the Goldstrike area will be sized for the 10-yr, 24-hr design storm, as specified by Washington County. The Division acknowledges Washington County's ultimate authority and jurisdiction over county owned/maintained roads. However, given the recent trend toward increased precipitation in this area, and the permanent nature of the road, it is *recommended* that the drainage culverts be sized for a larger design storm (eg., 50-yr, 6-hr for the larger drainages). (DWH)

Page 74-75, section 4.9, outlines the temporary sediment controls for the Beavertail Pit area. The written text is difficult to relate to the hydrologic structures as shown on drawing GS-018. The proposed location for the drainage swale is not clearly identified on the drawing. The complexity of switchback roads within the pit make it difficult to interpret how surface drainage will be directed out of the pit (GS-018). The Beavertail waste dump location is not labelled on this drawing. It is unclear if culvert 6A is the one referred to in the text to direct runoff from drainage basin 6B around the dump, or if there is a culvert not shown on the map (i.e., 6B?). The drawing and text should be revised to clearly indicate how temporary and long-term drainage will be handled in the vicinity of the new pit. (DWH)

Page 75, section 4.9, provides a general description of how the permanent Beavertail Dump runoff conveyance structure will be constructed/designed. Please provide design drawings (typical cross-section and profile) that show how this structure will be constructed and function. (DWH)

Page 87, section 6.5, refers to 6 drainage basins that will have 24-inch culverts installed during or following operations. Drawing GS-020 shows all of these drainage crossing locations with the exception of 2A. Is a crossing missing on this drawing, or will the drainage from this basin be routed to culverts 2B and 3C? Please clarify and modify the drawing if necessary. (DWH)

R647-4-110 Reclamation Plan

110.2 Reclamation of roads, highwall, slopes, drainages, pits, etc.

On page 83, paragraph 5, of the plan, the operator indicates that there will be a ten-year monitoring period of discharges from the decommissioned heaps to determine safe cyanide and heavy metal levels. Will this create a delay in achieving final reclamation of the heaps and the process facilities, until safe levels are verified? If so, when does the operator anticipate seeking surety release for the site? (HWS)

Page 85, section 6.4 describes the regrading of the leach pads in terms of the Hassayampa Pit highwall and the Main Pit highwall. Please show these features on the appropriate ultimate site development drawing. No description of the regrading of LP2-E2 was included in this same section. It

was assumed that regrading of the extension would be the same as that for Leach Pad #2. Please confirm or clarify this. (AAG)

Page 85, section 6.4, includes a paragraph describing the final pit slopes. No information specific to the proposed Beavertail pit is provided. Please provide a description of the final Beavertail pit slopes and post-reclamation highwall dimensions. (AAG)

Page 94, table 6.11-1 describes the proposed reclamation schedule. The schedule does not include a timeframe for rinsing, neutralizing and twelve months of monitoring for the leach pads as shown in figure 8.10-1. Please modify this schedule to include these activities for the leach pads. (AAG)

110.5 Revegetation planting program

Under the operator's discussion of seedbed preparation, it is mentioned that ripping depth will be 12 inches with rippers spaced 24 inches apart. The Division suggests that minimum ripping depth be 18 inches, especially for roads and staging areas. The ripper blade spacing could remain the same, or no more than 3 feet apart. The rule of thumb is one foot on either side of the ripper blade per foot of ripper depth. Also, on areas where feasible, such as pads, ripping should be performed in a two dimensional pattern. (HWS)

Page 91, section 6.10, states the perimeter fence will be removed when acceptable revegetation has occurred. Please explain why this item was not included in the reclamation cost estimate? (AAG)

R647-4-111 Reclamation Practices

111.8 All roads & pads reclaimed

On page 82, of the submittal, first paragraph, last sentence, it is stated that, "16 acres which will remain as post-mine access roads are included as reclaimed area". Does this mean that these roads will or will not be reclaimed? (HWS)

111.9 Dams & impoundments left self draining & stable

Page 77, section 5.1, indicates that there will be two *impounding* structures remaining on the project site following reclamation (Quail Canyon dam and Sediment dam). On page 87, section 6.5, the plan indicates that the Sediment dam would remain intact, but *not impound* water. The plan states that the structure will be reclaimed using the same techniques as for the rest of the mine. On page 95, section 7.0, the operator requests a variance to leave the Quail Canyon dam intact following mine closure.

These statements are confusing, and somewhat contradictory. Will the Sediment dam be left following reclamation of the site? If so, how will it be reclaimed *not* to impound surface runoff? The Quail Canyon dam variance request may need to be extended to include the Sediment dam, if it is to remain as a permanent impounding structure following reclamation. (DWH)

111.12 Topsoil redistribution

Page 89, section 6.6, mentions the volume of topsoil available as 433,600 cubic yards. Page 72, table 4.8-2, states 433,800 cubic yards can be recovered. The difference between these figures is not highly significant, but the values used should be consistent. Please adjust these values accordingly or offer an explanation why they should differ. (AAG)

R647-4-112 Variance

The variance request for leaving the Quail Canyon dam (item 7.0, page 95) is acceptable to the Division. However, it is unclear if a variance request (and justification) is necessary for the Sediment dam (see section R647-4-111.9 above)? (DWH)

The Division accepts the variance requests for items 7.1, page 95.

Page 95, section 7.2 refers to the slope stability analysis in Appendix F. This appears to be a typo and should refer to Appendix G. A variance for highwall angles greater than 45 degrees was previously granted for those pits included in the previous submission to the Division. This submission does not include any specific information to support extrapolating the previous slope stability analyses to the new Beavertail pit. Please provide a rationale for extrapolating the stability analysis to the new pit. The Division

will need this information in order to evaluate the variance request for the new pit. (AAG)

R647-4-113 Surety

The Division accepts USMX's figures for a number of line items in the reclamation surety estimate. The figures which were adjusted were for regrading, ripping, topsoiling, revegetation and the highwall fence. A D9N regrading cost of $208/hr at 873 LCY/hr productivity was arrived at using the Rental Rate Blue Book 4/93 and Means 93 references. An average of this cost and USMX's estimate of $157/hr was used to arrive at the figure of $0.21/CY. The ripping cost used was also arrived at by averaging a D8N $205/hr cost with the $125/hr USMX estimate. The topsoiling hourly costs for a D8N dozer were not consistent with other D8N costs in the USMX estimate. An hourly cost of $250/hr was used for two D8N dozers in this estimate giving a total of $862/hr for topsoiling. The revegetation cost proposed by USMX for hand seeding ($43.08/acre) did not appear to include the application and material costs for mulch and fertilizer which the reclamation plan prescribes for the disturbed areas. For this reason, a combined cost of $243/acre was used to represent hand seeding. This figure included $100 each for mulch and fertilizer and their application. This $243/acre figure was then averaged with USMX's figure ($272/acre) for mechanical application. Adding in seed costs gave a figure of $452/acre for revegetation. The $1.50/LF cost for fencing provided by USMX did not seem realistic, when compared with the 1992 Tenneco estimate of $3.67/LF and a cost from the Means reference of $2.97/LF. A cost of $2.40/LF was assumed to be adequate. Please refer to the attached draft surety estimate for details. (AAG)

The Division estimate for the amended Goldstrike Mine is $2,102,200 in 1998 dollars. This estimate is an increase of $34,900 from the currently posted surety amount of $2,067,300. This is a 1.7 percent increase from the existing surety. We believe there is enough flexibility and contingency (along with other extenuating factors) built into the estimate which would compensate for this difference. Therefore, the Division will not require USMX to increase the surety amount at this time. (AAG)

R647-4-116 Public Notice & Appeals

Because the Division has categorized this proposal as a permit amendment, formal public notice will not be required prior to our approval of this amendment.

It is our opinion that most of these deficiencies are principally *housekeeping* issues, consequently, we will not require USMX to satisfy our concerns before beginning the proposed construction. However, USMX must provide the requested information no later than December 6, 1993. The only exception to this deadline would be our receipt of DWQ's final approved design plans for the extension of Heap #2 and the new 5,000,000 gallon process solution storage pond.

Thank you for your cooperation and patience in completing this permitting action. Please contact me, Holland Shepherd or Tony Gallegos of the Minerals staff should you have questions regarding this review.

Sincerely,

D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb
Attachment
cc: Debbie Pietrzak, BLM, Dixie RA
Don Ostler, DWQ
Lowell Braxton, DOGM
Minerals staff (route)
USMXGOLD.RVW

RECLAMATION ESTIMATE **DRAFT**

USMX last revision 11/03/93

Goldstrike Mine Washington County filename M53-05B.WQ1

M/053/005

Prepared by Utah State Division of Oil, Gas & Mining

Reclamation Details

-USMX estimates, DOGM unit costs, Means Site Work & Blue Book used
-Decommission labor, reagents, supplies, vehicles, etc. (USMX estimate)
-Leach pads to be rinsed, detoxified, then dormant for 12 months before regrading
-Regrade leach pads, facilities, waste rock, ponds, some roads
-Rip ponds, roads, facilities, & compacted seedbed areas
-Install culverts in sections of road to become county road
-Partial backfilling of Moosehead & Beavertail pits (to be non-impounding)
-Hauling & placing topsoil by scrapers, dozers, & water truck
-Revegetation to include seeding, mulching, crimping, fertilizing
-Miscellaneous: plant & lab demolition, equip. mob/demob, DI pipeline
-Total disturbed area = 421 acres, reclaimed area = 348.8 acres

Description	Amount		$/Unit	Cost-$
Decommission leach pads		USMX estimate		648,800
Site regrading(D9N, 873cy/hr, $183/hr)	1,072,489	CY	0.21	225,223
Ripping(D8N)	103	hr	165	16,995
Culvert installation		USMX estimate		34,000
Pit backfilling		USMX estimate		145,000
Topsoiling	475	hr	862	409,450
Revegetation	348.8	acre	452	157,658
Highwall fence	4,100	ft	2.40	9,840
Miscellaneous		USMX estimate		48,000
Supervision		USMX estimate		86,000
	SUBTOTAL			1,780,965
	+ 10% CONTINGENCY			178,097
	SUBTOTAL			1,959,062
	+ 5 yr ESCALATION(1.42%)			143,100
	TOTAL			2,102,162
	ROUNDED TOTAL IN 1998-$			$2,102,200
Average cost per acre =	$6,027	per acre		

EXISTING SURETY AMOUNT IS $2,067,300 DIFF= $34,900

% difference between existing & proposed surety = 1.7 %